MOON NAMES

NOVEMBER 14, 2008

Full Moon names date back to Native Americans, of what is now the northern and eastern United States. The tribes kept track of the seasons by giving distinctive names to each recurring full Moon. Their names were applied to the entire month in which each occurred. There was some variation in the Moon names, but in general, the same ones were current throughout the Algonquin tribes from New England to Lake Superior. European settlers followed that custom and created some of their own names. Since the lunar month is only 29 days long on the average, the full Moon dates shift from year to year. Here is the Farmers Almanac's list of the full Moon names.

• **Full Wolf Moon - January** Amid the cold and deep snows of midwinter, the wolf packs howled hungrily outside Indian villages. Thus, the name for January's full Moon. Sometimes it was also referred to as the Old Moon, or the Moon After Yule. Some called it the Full Snow Moon, but most tribes applied that name to the next Moon.

_Full Snow Moon - February Since the heaviest snow usually falls during this month, native tribes of the north and east most often called February's full Moon the Full Snow Moon. Some tribes also referred to this Moon as the Full Hunger Moon, since harsh weather conditions in their areas made hunting very difficult

Full Worm - March Moon As the temperature begins to warm and the ground begins to thaw, earthworm casts appear, heralding the return of the robins. The more northern tribes knew this Moon as the Full Crow Moon, when the cawing of crows signaled the end of winter; or the Full Crust Moon, because the snow cover becomes crusted from thawing by day and freezing at night. The Full Sap Moon, marking the time of tapping maple trees, is another variation. To the settlers, it was also known as the Lenten Moon, and was considered to be the last full Moon of winter.

• **Full Pink Moon - April** This name came from the herb moss pink, or wild ground phlox, which is one of the earliest widespread flowers of the spring. Other names for this month's celestial body include the Full Sprouting Grass Moon, the Egg Moon, and among coastal tribes the Full Fish Moon, because this was the time that the shad swam upstream to spawn.

• **Full Flower Moon - May** In most areas, flowers are abundant everywhere during this time. Thus, the name of this Moon. Other names include the Full Com Planting Moon, or the Milk Moon.

• **Full Strawberry Moon - June** This name was universal to every Algonquin tribe. However, in Europe they called it the Rose Moon. Also because the relatively short season for harvesting strawberries comes each year during the month of June ... so the full Moon that occurs during that month was christened for the strawberry!

• **The Full Buck Moon - July** July is normally the month when the new antlers of buck deer push out of their foreheads in coatings of velvety fur. It was also often called the Full Thunder Moon, for the reason that thunderstorms are most frequent during this time. Another name for this month's Moon was the Full Hay Moon.

• **Full Sturgeon Moon - August** The fishing tribes are given credit for the naming of this Moon, since sturgeon, a large fish of the Great Lakes and other major bodies of water, were most readily caught during this month. A few tribes knew it as the Full Red Moon because, as the Moon rises, it appears reddish through any sultry haze. It was also called the Green Com Moon or Grain Moon.

• **Full Harvest Moon - September** This is the full Moon that occurs closest to the autumn equinox. In two years out of three, the Harvest Moon comes in September, but in some years it occurs in October. At the peak of harvest, farmers can work late into the night by the light of this Moon. Usually the full Moon rises an average of 50 minutes later each night, but for the few nights around the Harvest Moon, the Moon seems to rise at nearly the same time each night: just 25 to 30 minutes later across the U.S., and only 10 to 20 minutes later for much of Canada and Europe. Com, pumpkins, squash, beans, and wild rice the chief Indian staples are now ready for gathering.

• **Full Hunter's Moon - October** With the leaves falling and the deer fattened, it is time to hunt. Since the fields have been reaped, hunters can easily see fox and the animals which have come out to glean.

• **Full Beaver Moon - November** This was the time to set beaver traps before the swamps froze, to ensure a supply of warm winter furs. Another interpretation suggests that the name Full Beaver Moon comes from the fact that the beavers are now actively preparing for winter. It is sometimes also referred to as the Frosty Moon.

• **The Full Cold Moon; or the Full Long Nights Moon - December** During this month the winter cold fastens its grip, and nights are at their longest and darkest. It is also sometimes called the Moon before Yule. The term Long Night Moon is a doubly appropriate name because the midwinter night is indeed long, and because the Moon is above the horizon for a long time. The midwinter full Moon has a high trajectory across the sky because it is opposite a low Sun.

THE MOON ILLUSION

Albert G. Wilson

It has been experimentally demonstrated that the moon illusion, the apparent enlargement of the diameter of the moon when near the horizon, is a psychological, not an atmospheric effect. Several hypotheses have been suggested, including the effect is due to the angle our head makes with horizon, the effect arises from comparisons with the sizes of more familiar objects such as trees and chimneys, the effect has something to do with rods and cones, etc. None of these proposals is very satisfying.

My interest in the illusion began when I lived in Topanga Canyon in California. Our house was located half way up the side of a hill, and we could look across the canyon at a symmetric mountain of roughly pyramid shape. This mountain was interesting because it changed size at night. In the full light of day, the mountain was seen to be covered with brush and trees and it extended to cover a sizeable portion of the direct cross-canyon view. At night, however, when only little more than outlines were visible, it shrank down to being but a small fraction of the canyon view. It occurred to me that this effect was related to the apparent change of size of the moon as it climbed from the horizon.

The common ingredient in both cases was information. In the\ daytime the view of the mountain was filled with detail, shapes of trees, rocks, etc., an abundance of information. The same for the moon when near the horizon, lots of information in the view, roof tops, trees, poles, etc. In both cases the mountain and the moon were enlarged. At night the details on the mountain disappeared with much loss of information. And when the moon is higher in the sky there is also much less information in the view. In both cases the mountain and the moon appear to be smaller. In toto we have, when there is lots of information present, the central object of view becomes enlarged, with less information present, the object shrinks.

One way of explaining this is to postulate two diaphragms or 'cones of view.' One diaphragms or cone is the sensory or optical field of view, the field optometrists' study when they check peripheral vision. The other diaphragm or cone is a cognitive or informational one defined by the amount of visual information that can be processed in some physiological time unit.

The angular size of both cones is limited, but the ratio of their sizes varies. When the 'density' of information is large, the angular field of the cognitive cone narrows resulting in the object of view occupying a larger fraction of this information cone, i.e. the object appears enlarged. Conversely, when the density of information is smaller, the angular field of the cognitive cone grows, and the central object appears relatively smaller. The apparent size of an object is determined by its angular relation to the cognitive cone, not the optical cone.

There is also a rod-cone illumination factor affecting the size of the optical cone, but this is apparently a much smaller effect than the angular changes taking place in information processing. A small cognitive angle of elevation effect may also be present, a vestige of primitive man's survival adaptation.

More formally, in a cognitive cone we postulate a bound to the number of bits of information that can be processed per scanning time unit. If σ = the information density measured in bits/(arcsec)^2,and if Ω= the angular field size of the information cone, the total number of bits is = $\sigma\Omega$. The value of Ω will adjust so that the bound, $\sigma\Omega./t \leq$ B, is satisfied, where B is the maximum amount of information that can be processed in time t. For t fixed, (the static case), a large value of σ forces Ω. to be smaller, which in turn makes a centrally viewed object occupy a larger percentage of Ω. Conversely, a small value of σ *allows* Ω to be larger and a central object appears smaller. In summary, the moon illusion is the result of the existence of a limit to our visual information processing capacity.

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THE NIGHT
OF THE HUNTER'S MOON

There are many kinds of moon: new moons, full moons, first quarter and last quarter moons, crescent moons, half-moons and gibbous moons. There are blood moons that occur during an eclipse, and there are blue moons that occur whenever there are two full moons in the same month, (once every 2 .73 years).

There are June moons and August moons.There are harvest moons (the full moon closest to the autumnal equinox) and hunter's moons (the full moon following the harvest moon). All these moons have been described together with their mystiques and symbolism in folk lore, song, and literature.Tonight, is the night of the hunter's moon. As twilight fell, I went up the hill looking over the lagoon and watched the cattle slowly wending their way home, a scene whose quiet and timeless mood was poetically captured years ago in Gray's solemn Elegy. As darkness fell the lights of the distant city began to flicker on and off and behind them the outline of the hills gradually softened. Then replacing the day’s fading weariness, the hills gradually softened.

Then replacing the day's fading weariness, a magical energy emerged, and the lights of the city were joined by a myriad flashing points that danced along the hill tops. What was this? I had never seen the like before. Were these tips of flames of some hidden fire behind the hill, alternately disappearing and reappearing and then racing back and forth along the ridge? They were not flaming, they were fairies celebrating an enchanting reality that mortals who have great good fortune may once in a blue moon be allowed to glimpse. How is it that we can recognize that reality from only a glimpse?

We know it is real, more real than the world of day. It calls to us and reminds us who we are. In it we catch a view of our long-lost home whose beauty and mystery moves us to tears. But hold. Now a faint glow rises behind the ridge. It brightens and suddenly a spot of brilliant orange appears. Everything stops and for the next few moments remains transfixed as the orange globe of the hunter's moon majestically mounts into the sky.

It is Samhain, the night when our world and the magic world of the fairy lights are in communion. It is the season when we can see a transcendent reality of transforming beauty and know for a brief moment who we really are. This the Celtic peoples of long ago well knew. We have since forgotten, though we celebrate it still. We call it Halloween.

THE NIGHT SKY

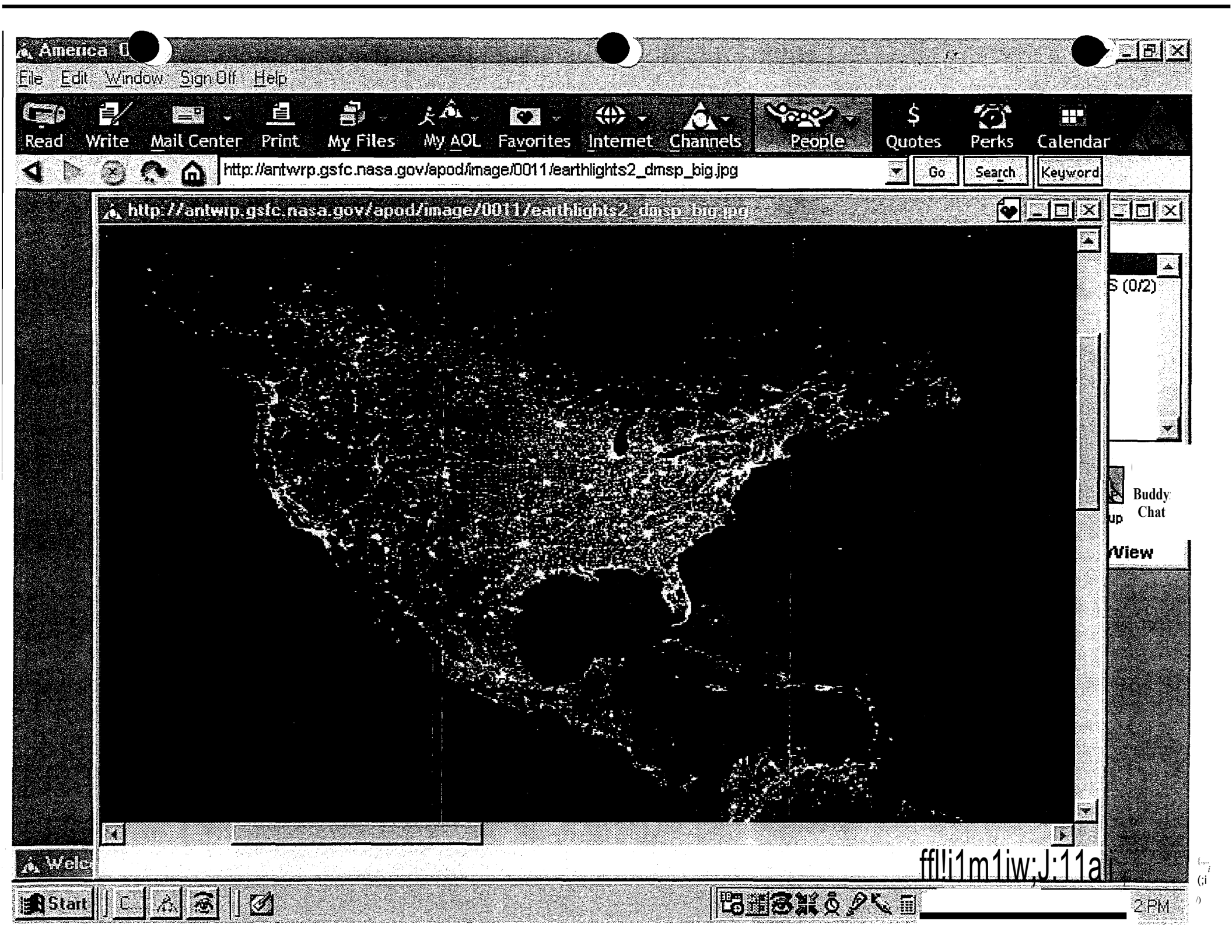
SEPTEMBER 5, 2000

When we can no longer see the stars, what within us will die?

Today I received a flyer in the mail from the International Dark-Sky Association. This is a non-profit organization dedicated to reducing the amount of nighttime scattered artificial light, which they point out is not only wasteful but threatening to steal from human experience the majesty and mystery of the starry heavens. At the core of this group are astronomers, both professional and amateur, who have correctly analyzed the waste and cost of lighting the night sky. Thirty percent of nighttime artificial light is scattered upward where it provides no utilitarian function for either activity or security. They estimate the annual cost of this wasted light to be in excess of $1.5 billion. But what is the real cost?

THE NIGHT FACE OF NORTH AMERICA
(International Dark Sky Association)

For millennia our ancestors have watched the steadfastness and the movements of the night sky. This continuing spectacle of permanence and change has played an immense role in the intellectual and spiritual development of humanity. The starry sky has been our window onto that which is beyond ourselves, it has been our link to the "Other". At this time, we are becoming aware of how many of our activities are eroding and threatening our home, the Earth. But in our narrow obsessions we are also closing the window to the prime source of our being and to the dynamic of our becoming. The receiving into our being of the light of the stars has for ages been a sacrament uniting us with all of which we are a part. Starlight is the stem cell of humanity's spiritual essence. If the window closes, what within us will die?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THE WORLD OF SILENCE
OCTOBER 2, 1997

After many years observing the stars, I finally realized what my desire to be an astronomer had really been about. It was a need for a time of solitude, a time of silence, a time to let one's consciousness go beyond the immediate, the local, the ephemeral. When years later I discovered more traditional forms of meditation, it seemed very much deja vu. I had been there before when seeking the Great Silence that lies beyond the shutters of an observatory dome.

Now many years later as I lose my sensory hearing, the sounds that are closest to the Silence disappear first, the soughing of the wind in the trees, the songs of birds, and the many melodies that are sung by the voices of water. Last to be lost are the sounds that belong least to the World of Silence, horns, engines, trucks...

But as outer hearing fades, it is slowly replaced by an inner hearing. I begin to "hear" sounds from some nearby hidden world, a world that fleetingly manifests itself at unexpected times and places, always accompanied by a moment of awe and wonderment. There is brief recognition of vistas of great beauty, an instant of presence in which one beholds the world as it really is unobscured by the curtains of illusion that we, as physical beings, have by consensus drawn about ourselves. At times I can hear bells, great and small, ringing in a random harmony. They swell, then fade. At their peak their pealing subdues all the noise of this world. And when evening falls the darkening sky frees the light from other secreted worlds, and when the earth falls silent ward it sets free the sounds of these other realms. It is thus that we begin to perceive how we are imprisoned by the luminous and sonorous noises of this world.

August 1981

THE ASTRONOMY OF SILENCE

Astronomy is the science in which we do not speak, only listen, listen to the starlight. It is true that we listen selectively, and that we understand only part of what we hear. But in having to remain silent we are not so likely to confuse our own voice with the voice of the cosmos. It is curious that with access to such purity, we nonetheless seek to extend our prejudices to encompass the whole universe by assuming that as it is here it is so everywhere and that as it is now it will always be.

Are we really ready to encounter the stars? Until we realize our identity with our parents, the Earth and the Sun, and know all the members of our family, we have not the wisdom to meet with any who may dwell beyond our home. Only when we come into oneness with all that live here, all that here support, all that endure in our midst, will we be able to hear and respond to the wondrous variety that inhabits the Cosmos.

It has been asked, why have we not been contacted? Perhaps we are unprepared to know what lies beyond. Is it that we are not ready to
receive, or is it that we have nothing to give? So long as we are intolerant and uncomfortable with local variety, we are not ready to encounter true variety. So long as we seek to render the world in our own image, we are not ready for coexistence with pluralities of images.

Only through the astronomy of silence, hearing what the starlight is seeking to tell us, will we reach the maturity for cosmic companionship.

ECLIPSE 1990

Here we were suspended half way between heaven and earth and there was the amazing corona of the sun and adjacent were stars and planets that would not be visible again until another time of year. The whole universe was displayed above and beneath us. I had the strongest feeling that if I could just look at this spectacle long enough, I could penetrate further into the truth than with all the data we could ever collect with our instruments. In that moment of deep darkness, I felt for the first time the oneness of all things, the earth, the sun, the stars, and we ourselves in the middle of it all. This was enlightenment. This was a glimpse of God.

(You know, today I can't remember what the purpose of our observations was. We collected and reduced our data, wrote and published the report and it sits on some shelves in some libraries. But that does not matter. The exploration began with a telescope, but the message was received with the heart. For me now darkness is not fearful nor depressing. It has become through the path of knowing a way to the mystic's 'cloud of unknowing'. And this is what the darkness of Advent can be.

I often think about the astronauts and their encounter with darkness. In outer space all is black. But this is curious because space is filled with light. Light is everywhere and nowhere, and only when it strikes a bit of matter does it manifest itself. This give us a different way to look at light and dark, perhaps closer to the way it was before God separated the light from the darkness to make day and night. It is only on the surface of the earth that light and dark are so separated. Elsewhere they are intimately intertwined. I think this is why it is said that 'to God light and dark are as one'. I feel the time has come for us to venture into the darkness knowing that in its depths we will find a light greater than any we have known.

THE STARS

JANUARY 2, 2001

One of the earliest memories of my childhood wasan evening walk with my parents. As I recall we had left the city and were in the country walking along a railroad track. My father took my arm and pointed out to me the stars up in the dark sky. For some reason I becamevery excited, as though I had just been told I was going to receive a present, a new puppy or even a pony. I just had to look and look and look at the stars. Then my mother taught me the little verse, "Twinkle, twinkle, little star, ..." And I kept saying it over and over all the way home.

Today I sometimes wonder if, with the stars obscured and our eyes constantly trained on ourselves, we inevitably limit our identities to "me and mine". The stars teach us humility, but they also give us a sense of being an important part of an unfathomable profundity. When we look up at the stars, we cannot help but feel a oneness with them, we recognize that we are part of them, and they are part of us. Not only because in their wombs the carbon basis of life was incubated, but that from their selfless radiance our lives are sustained.

As we contemplate voyaging to their abodes, our "me" focused identities dissolve. And as we join hands in this enterprise with those we once thought of as foreigners or even enemies, and launch the human venture into space, we find that our oneness with the starshas brought us a oneness with ourselves

PRE-SCHOOL COSMOLOGISTS

APRIL 28, 1994

I am often asked how I decided to become an astronomer. Unlike a lot of other things, I did not know why, I have a very clear memory of why I decided to become an astronomer. The story goes back to Denver, Colorado sometimes around 1924.

We lived in a small upstairs apartment on Franklin Street between Colfax and 16th Ave. Across the street was a large vivacious self-confident family whose name was Lunt. The youngest son in this group was a boy my age named Horace. We were to attend kindergarten together in the fall at the old Wyman School. We had developed a close relationship which involved not only play but discussion on all manner of things which challenged young boys.

One day the subject of the world came up. And somehow a dispute across over whether we lived on the inside of the world or the outside. I held that we lived on the inside of the world. My cosmology was that the world was shaped like a hamburger bun, flat on the bottom, round at the top. It was a hollow bun; the earth was the flat part beneath and the sky was the part overhead. * This was the observational cosmology of a five-year-old. But against this was the well-informed cosmology of a teacher's youngest son. He knew that the world was shaped like a ball and that we lived on the outside not the inside. This stunned me, it violated all my personal experience. I could not imagine this. To settle the dispute, we took the matter to authority, an older Lunt sister. I was wrong. The earth was a sphere and we lived on the outside. Furthermore, there were other spheres, the sky was full of them. They were called planets and stars. How could I be so wrong? I guess I felt I had not given the matter adequate consideration. So, starting right then and there I began to give the matter consideration. I learned all I could about the earth, planets and starts. By the time I was in the fourth grade I was the recognized authority on all matters astronomical. The momentum of this launched me into a career in astronomy in which I was an observer, a theoretician, a professor, the director of an observatory. But I thought I taught astronomy for many years, I never took a course in astronomy.

Although y observational model as a five-year-old was wrong, I have never given up the value that personal experience is to be trusted. And all my life I have placed my personal experience, not against conventional wisdom, but in juxtaposition to it. And when there are differences, I have to assume both are somehow right and search for a larger framework that contains them both.

I question both. * and tend to the one that is most liberating

- I, of course, did not know that the ancients had the same idea, but [they evidently didn't have hamburger buns in these days and had to substitute turtles
- Horace Gray Lunt III
    - Went on to become and outstanding linguist
    - He became a professor of Slavonic languages at Harvard and one of the world's foremost schools on Old Church Slavonic.